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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,744	10/22/2001	Dirk Quintens	27500-10	8435

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EXAMINER

TSOY, ELENA

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,744

Applicant(s)

QUINTENS ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/09/2005 has been entered.

Response to Amendment

1. Amendment filed on July 1, 2005 has been entered. Claims 1-9, 11-12 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi (US 6,485,812) in view of JP63101463.

Sekiguchi discloses a method for the preparation of an ink jet recording sheet comprising coating **at least one** ink-receiving layer comprising fine inorganic particles and a binder resin, formed on one side of the support, wherein at least one ink-receiving layer contains at least one tetraalkoxytitanium (See Abstract) with outermost ink-receiving layer made of a layer employing colloidal silica and tetraalkoxytitanium (See column 5, lines 42-46; column 6, lines 15-19). In a

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preferred example, an ink-receiving layer having a binder, tetraalkoxytitanium having long alkyl group and colloidal silica in water (claimed aqueous layer b) (See column 14, lines 43-50) is coated **on** an ink-receiving layer made of aqueous dispersion of alumina hydrate (claimed layer a) (See column 15, lines 28-33; column 31, lines 46-59). The ink-receiving layer (b) may contain various additives including surfactants (See column 12, lines 39-42). Both layers comprise, in addition to fine inorganic particles of alumina hydrate or colloidal silica (See column 9, lines 28-30), a binder in an amount of 0.1 to 100 parts by weight, more preferably from 2 to 50 parts by weight, per 100 parts by weight of the fine inorganic particles (See column 12, lines 32-34). The binder resin is any known natural and synthetic resin binder without any particular restriction (See column 12, lines 13-16), including (water-soluble) hydroxyethyl (ether) cellulose (See column 11, lines 60-65) and PVA, which is a *water-soluble* polymer, which is also soluble in methanol and ethylene glycol (See column 11, lines 60-67; column 12, lines 1-20), or preferably binder resins containing amino groups (See column 12, lines 16-20). The ink-receiving layer (b) may be based on water but *preferably* employ an *organocolloidal* silica, where water is substituted by an organic solvent such as methanol, ethylene glycol for the purpose of suppressing hydrolysis of the tetraalkoxytitanium (See column 15, lines 33-40). Sekiguchi teaches that a plurality of ink-receiving layers are simultaneously coated in wet-on-wet fashion (See column 17, lines 40-45).

In other words, the an ink jet recording sheet of Sekiguchi comprises a layer pack comprising in order, (a) a layer *containing* aqueous dispersion of alumina hydrate pigment in an amount within claimed range and an *aqueous solution* of PVA (See column 31, lines 46-59), and (b) a layer *containing* a water-soluble polymer PVA and an organocolloidal silica in methanol, ethylene glycol.

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Sekiguchi fails to teach that the layers (a) and (b) are coated simultaneously wet-on-wet wherein the static surface tension of a top layer (b) is lower than the static surface tension of a layer (a) (Claim 1).

JP'463 teaches that when upper coat paint, e.g. clear paint is applied on a base coat paint by wet-on-wet process, wherein the surface tension of the base paint is higher than that of the upper coat paint, the upper coat paint expands to make thin film over the base coat film surface, and shows good levelling property (See Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied upper layer (b) on a base layer (a) in Sekiguchi by wet-on-wet process, wherein the surface tension of the base layer (a) is higher than that of the upper layer (b), with the expectation of providing the desired good levelling property and good expansion of the upper layer (b) to make thin film over the base layer (a) surface, as taught by JP'463.

5. **Claims 4-6, 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi in view of JP63101463, further in view of Cousin et al (US 4,554,181).

Sekiguchi in view of JP63101463, as applied above, fails to teach that the water-soluble polymer is a cationic polymer (Claim 4) such as nitrogen containing cationic polymer (Claim 5), e.g. poly(diallyldimethylammonium chloride) (Claim 6) or polyamine (Claim 9).

Cousin et al teach that coatings comprising nitrogen containing cationic polymers such as poly(diallyldimethylammonium chloride) or polyamine (See column 5, lines 19-21) on a recording sheet provide non-offsetting images good and water fastness since the cationic polymers insolubilize anionic dyes (See column 2, lines 34-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used nitrogen containing cationic polymers such as poly(diallyldimethylammonium

chloride) or polyamine as water-soluble polymer in a method of Sekiguchi in view of JP63101463 with the expectation of providing the desired non-offsetting images good and water fastness, as taught by Cousin et al.

6. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi in view of JP63101463, further in view of Cousin et al, and further in view of Rabasco (US 6,455,134).

Sekiguchi in view of JP63101463 in view of Cousin et al, as applied above, fails to teach that the cationic nitrogen containing polymer is copoly(vinylalcohol-vinylacetate-diallyldimethylammonium chloride).

Rabasco teaches that coatings comprising cationic nitrogen containing polymers such as a copolymer of vinylacetate, diallyldimethylammonium chloride and vinylalcohol (See column 4, lines 9-13, 24-25, 41-42, 47, 52, 57-63) provide an ink recording paper with improved functions such as good water and light fastness (See column 1, lines 6-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a copolymer of vinylacetate, diallyldimethylammonium chloride and vinylalcohol as a cationic nitrogen containing polymer in a method of Sekiguchi in view of JP63101463 in view of Cousin et al for the preparation of an ink jet recording sheet with the expectation of providing the ink jet recording sheet with the desired improved functions such as good water and light fastness, as taught by Rabasco.

7. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi in view of JP63101463 in view of Cousin et al, and further in view of Malhotra et al (US 5,693,410).

Sekiguchi in view of JP63101463 in view of Cousin et al, as applied above, fails to teach that the cationic nitrogen containing polymer is cellulose 2-hydroxyethylether polymer with N,N-dimethyl, N-2 propenyl-2 propene-1-ammoniumchloride.

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Malhotra et al teach that coatings comprising cationic nitrogen containing polymers such as diethylammonium chloride hydroxyethyl (ether) cellulose (See column 23, lines 22-26) provide the ink receiving transparencies and papers with many advantages such as excellent water fast and lightfast images (See column 1, lines 6-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used diethylammonium chloride hydroxyethyl (ether) cellulose as a cationic nitrogen containing polymer in a method of Sekiguchi in view of JP63101463 in view of Cousin et al for the preparation of an ink jet recording sheet with the expectation of providing the ink jet recording sheet with the desired advantages such as water fast and lightfast images, as taught by Malhotra et al.

It is held that compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also In re May, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (stereoisomers prima facie obvious).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used any isomer of hydroxyethyl (ether) cellulose including 2-hydroxyethyl (ether) cellulose and homologue of diethylammonium chloride including dimethylammonium chloride in a method of Sekiguchi in view of JP63101463 in view of Cousin et al, further in view of Malhotra et al for the preparation of an ink jet recording sheet with the expectation of providing the ink jet recording sheet with the desired advantages such as water fast and lightfast images, since it is held

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that compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties.

8. **Claims 11, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi in view of JP63101463, further in view of Van den Zegel (US 5,693,370).

Sekiguchi in view of JP63101463, as applied above, fails to teach that the layers are coated simultaneously wet on wet using a slide-hopper coating technique (Claim 11) or a curtain coating technique (Claim 12).

Van den Zegel teaches that a slide-hopper coating technique or a slide-hopper curtain coating technique can be used for applying hydrophilic layers simultaneously in wet on wet fashion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used slide-hopper coating technique or by the slide-hopper curtain coating technique for applying simultaneously wet on wet a plurality of layers in a method of Sekiguchi in view of JP63101463 since Van den Zegel teaches that slide-hopper coating technique or slide-hopper curtain coating technique can be used for applying hydrophilic layers simultaneously in wet on wet fashion.

Response to Arguments

9. Applicants' arguments filed July 1, 2005 have been fully considered but they are not persuasive.

Applicants argue that the combination of Sekiguchi and JP 1463 fails to teach

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simultaneously coating wet-on-wet layers. Alternatively, the combination of Sekiguchi and JP '463 teaches against simultaneous wet-on-wet coating of two aqueous layers. The rejection is therefore improper and withdrawal is respectfully requested.

The Examiner respectfully disagrees with this argument. First of all, Sekiguchi does teach simultaneously coating wet-on-wet layers: Sekiguchi teaches that it is possible to coat a certain amount of the ink-receiving layer on the support in installments. As the method for coating the ink-receiving layer on the support in installments, after a layer gets dry, the next layer may be coated thereon, or **a plurality of layers are simultaneously coated in a wet-on-wet fashion** (See column 17, lines 40-45). Sekiguchi further teaches that an ink-receiving layer having a binder, tetraalkoxytitanium having long alkyl group and colloidal silica in **water** (claimed aqueous layer b) (See column 14, lines 43-50) is coated **on** an ink-receiving layer made of aqueous dispersion of alumina hydrate (claimed layer a) (See column 15, lines 28-33; column 31, lines 46-59). Since Sekiguchi does NOT limit simultaneous wet-on-wet coating to a combination of an aqueous and non-aqueous layers, it could be reasonably assumed that Sekiguchi teaches simultaneous wet-on-wet coatings of aqueous layers.

Secondly, JP '463 does NOT teach against simultaneous wet-on-wet coating of two aqueous layers. JP '463 teaches simultaneous wet-on-wet coating of two organic solvent based layers. Therefore, the combination of Sekiguchi and JP'463 does NOT teach against simultaneous wet-on-wet coating of two aqueous layers.

Thirdly, JP '463 is applied to show that no matter what coating compositions are used, it is important that surface tension of lower layer should be higher than that of upper layer to achieve good levelling property and good expansion of the upper layer.

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Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-142323. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy
Primary Examiner
Art Unit 1762

August 17, 2005

**ELENA TSOY
PRIMARY EXAMINER**
ETsoy